July 21, 2003

Dr. Ronald L. Simard
Nuclear Energy Institute
1776 I Street, NW, Suite 400
Washington, DC 20006-3708

SUBJECT: EARLY SITE PERMIT TOPIC 8 (ESP-8), FUEL CYCLE AND TRANSPORTATION IMPACTS

Dear Dr. Simard:

This is in response to your letter dated May 7, 2003, regarding analysis of fuel cycle and transportation impacts for early site permit (ESP) applications. This topic, which is identified as ESP-8 on the list of Nuclear Energy Institute (NEI) generic ESP issues, was discussed at several public meetings between September 2002 and March 2003. Your letter describes the lead ESP applicants' planned approach to addressing these impacts. While your letter states that no response is necessary, the staff believes a response is appropriate to provide and document the staff's positions on certain aspects of this issue.

The staff agrees that the approach to addressing fuel cycle and transportation impacts will differ for light-water reactors (LWRs) and non-light water reactors. Should an applicant choose to submit an ESP application that references one or more LWR designs (or that includes a plant parameter envelope [PPE] intended to represent only LWRs), such applicants must use Table S-3 in 10 CFR 51.51 as the basis for evaluating fuel cycle impacts. Use of Table S-4 in 10 CFR 51.52 for transportation impacts may require additional analysis by the applicant. In accordance with 10 CFR 51.52, detailed analysis is required if the requirements of 10 CFR 51.52(a), with reference to limitations on enrichment, burnup, and power level, are exceeded. In accordance with 10 CFR 51.52(b), the applicant would need to provide a full description and detailed analysis of the environmental effects of transportation of spent fuel and wastes to and from the reactor, including values for the environmental impact under normal conditions of transport and for the environmental risk from accidents in transport.

With regard to an ESP application that references one or more non-LWR designs, the staff notes that the criteria for applicability of 10 CFR 51.51 and 51.52 are not met, because both rules pertain only to LWRs. Therefore, Tables S-3 and S-4 are not appropriate reference sources for analyzing fuel cycle and transportation impacts for ESP applications that reference non-LWRs.

To support final NRC review of fuel cycle and transportation impacts of non-LWRs at the ESP stage, ESP applicants considering non-LWRs will need to fully address fuel cycle and transportation impacts of such reactors using appropriate references. Technical reports WASH-1238 and WASH-1248, which are source documents for Tables S-3 and S-4 and cited in 10 CFR 51.51 and 51.52, may be good references in determining the impacts. However, an ESP applicant referencing non-LWRs who uses impacts from these documents bears the burden of demonstrating that the impacts, and the methods used to determine those impacts,

are accurate and appropriate for the reactors (or PPE intended to represent the reactors) proposed by the applicant.

We would like to emphasize, as we have in several meetings with NEI and the prospective ESP applicants, that all identified fuel cycle and transportation impacts should be addressed in proportion to their significance. Finally, when discussing impacts of a new technology (e.g., enrichment or mining technologies), applicants should comprehensively address impacts of that technology, and should not just address impacts of earlier technology that are lessened by the new technology.

Please contact Mike Scott, ESP Project Manager, at 301-415-1421 or mls3@nrc.gov if you have any questions on this matter.

Sincerely,

/RA/

James E. Lyons, Director
New, Research and Test Reactors Program
Office of Nuclear Reactor Regulation

Project No. 689

cc: See next page

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